

REMARKS

The Office Action dated February 24, 2010 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 42-52 and 57-72 have been amended to more particularly point out and distinctly claim the subject matter of the invention. No new matter has been added. Claims 29-72 are currently pending in the application and are respectfully submitted for consideration.

The Office Action rejected claims 29-32, 34-45, 47-53, 55-60, and 62-67 under 35 U.S.C. §103(a) as being allegedly unpatentable over Hanson (U.S. Patent No. 6,023,624) in view of Barnett (U.S. Patent Pub. No. 2001/0006892). The Office Action took the position that Hanson discloses all of the elements of the claims with the exception of “providing as a current location” (Office Action, page 3). The Office Action then cited Barnett as allegedly curing this deficiency in Hanson. This rejection is respectfully traversed for at least the reasons discussed below.

Claim 29, upon which claims 30-40 are dependent, recites a method comprising receiving a request for a current location of a mobile station in a mobile communication system, the request being received from an application configured to provide location dependent services. The method further includes determining an elapsed time since a last known location of the mobile station was determined, and comparing the elapsed time to a threshold time limit. In response to the comparing, if the elapsed time is within the

threshold time limit, providing to the application, as the current location, the last known location, without contacting the mobile station. If the elapsed time is not within the threshold time limit, determining a current location of the mobile station and providing to the application, as the current location, the obtained current location.

Claim 41 recites a method comprising receiving at a network element a request from an application for a current location of a mobile station, the request being received from an application configured to provide location dependent services. The method further includes determining, at the network element, an elapsed time since a last known location of the mobile station was determined, and comparing, at the network element, the elapsed time to a threshold time limit. In response to the comparing, if the elapsed time is within the threshold time limit, providing to the application, as the current location, the last known location, without contacting the mobile station. If the elapsed time is not within the threshold time limit, determining a current location of the mobile station and providing to the application, as the current location, the obtained current location.

Claim 42, upon which claims 43-52 and 68 are dependent, recites an apparatus comprising means for receiving a request for a current location of a mobile station in a mobile communication system, the request being received from an application configured to provide location dependent services. The apparatus also includes means for determining an elapsed time since a last known location of the mobile station was determined, and means for comparing the elapsed time to a threshold time limit. The

apparatus further includes means for providing to the application, as the current location, the last known location, if the elapsed time is within the threshold time limit without contacting the said mobile station, and means for determining a current location of the mobile station and means for providing to the application, as the current location, the obtained current location, if the elapsed time is not within the threshold time limit.

Claim 53, upon which claims 54-56 and 69-72 are dependent, recites a mobile communication system comprising an application configured to provide location dependent services and to generate a location request for a user equipment. The system further includes a network element configured to receive the request for a current location of a mobile station, and a network element configured to determine an elapsed time since a last known location of the mobile station was determined and to compare the elapsed time to a threshold time limit. The system also includes a network element configured to provide, as the current location, in response to said step of comparing, the last known location, without contacting the said mobile station, if the elapsed time is within the threshold time limit, and a network element configured to determine a current location of the mobile station and to provide to the application, as the current location, in response to said comparing, the obtained current location, if the elapsed time is not within the threshold time limit.

Claim 57, upon which claims 58-67 are dependent, recites an apparatus comprising a receiver configured to receive a request for a current location of a mobile station in a mobile communication system, the request being received from an application

configured to provide location dependent services. The apparatus also includes a calculator configured to determine an elapsed time since a last known location of the mobile station was determined, and a comparator configured to compare the elapsed time to a threshold time limit. The apparatus further includes a register configured to provide to the application, as the current location, in response to the comparing, the last known location if the elapsed time is within the threshold time limit, without contacting the said mobile station, and a determining unit configured to determine a current location of the mobile station and a providing unit configured to provide to the application, as the current location, in response to the comparing, the obtained current location, if the elapsed time is not within the threshold time limit.

As will be discussed below, the combination of Hanson and Barnett fails to disclose or suggest all of the elements of the claims, and therefore fails to provide the features discussed above.

Hanson discloses a system for paging mobile telephone units (MTU) in a cellular mobile system that conserves paging resources. If the identity of the most recent cell in which the MTU was located matches the identity of the cell wherein the MTU was located on the previous registration, then an initial page covering only the cell of the most recent call location for the target MTU, and the neighboring cells for that cell, is used.

Barnett discloses a frequency scanning radio receiver that scans and receives transmissions on discrete radio frequencies. The frequency scanning radio receiver is programmable to monitor frequencies in a geographical area where the receiver is

located. The receiver is coupled to a communication device for communication with a positioning system, such as the global positioning system, to determine the geographical location of the frequency scanning radio receiver either automatically or in response to a manual request. A database of frequency allocation data, either internal to the radio or in a remotely located host system, provides frequency data to a memory in the frequency scanning radio receiver based on geographical location of the receiver determined through the communication device to program the receiver to monitor local radio frequency transmissions.

Applicants respectfully submit that Hanson and Barnett, whether considered alone or in combination, fail to disclose or suggest all of the elements of the claimed invention. For example, the combination of Hanson and Barnett does not disclose or suggest, at least, “receiving a request for a current location of a mobile station in a mobile communication system, the request being received from an application configured to provide location dependent services,” as recited in claim 29 and the similar limitations recited in claims 41, 42, 53, and 57.

As described above, Hanson discloses that, in order to locate a mobile communication device that is switched on but in idle mode, a paging signal is sent and the device responds to that paging signal (Hanson, Column 1, lines 17-53). However, if the device has moved since it was last paged, then determining the cell (or group of cells) in which the device is likely to be located remains a problem. Hanson solves this problem by determining the number of cells in which the mobile device is likely to be

located on the basis of the time elapsed since the location of the device was last determined. The longer the time since the location was last known, the larger the number of cells that are paged. Thus, Hanson teaches a method for finding a user device in this manner.

According to certain embodiments of the invention, on the other hand, a request is received for a current location of the mobile station from an application. Hanson, however, fails to disclose or suggest receiving a request for a current location of the mobile station from an application. Rather, the method in Hanson is implemented by the CDN 30, as clearly stated at col. 3, lines 52 and 53. The CDN does not “receive a request for a current location of a mobile station.”

Additionally, according to Hanson, the purpose of determining the current location is actually part of the paging procedure and not performed in response to a request. This is clear from column 1, lines 56-64 of Hanson, which provides that “the decision of the type of initial page to be performed is based upon the identity of the cell in which the target MTU was most recently located on the identity of the cell where the target MTU was previously found and the elapsed time since the most recent registration or location” (Hanson, Column 1, lines 56-64).

As described in column 3, lines 64 to column 4, line 45 and Fig. 5 of Hanson, the mobile phone is **always** paged. In particular, functional blocks 507, 513, 517 and 521 of Fig. 5 illustrate the fact that the mobile phone is always paged in some manner (Hanson, Fig. 5). In all the options provided by Hanson, paging the mobile phones is an essential

feature and it is impossible for the procedure of Hanson, once started, to end without one of these paging processes. Thus, it is clear from this that any effective determination of mobile phone location is part of the normal paging procedure in Hanson. This is not the case according to the claimed invention, on the other hand, because the request is received from an application.

Moreover, Hanson fails to disclose or suggest an “application configured to provide location dependent services,” as recited in the present claims. Embodiments of the present invention provide that the request for the current location of the mobile station is “received from an application configured to provide location dependent services.” The Office Action took the position that the CDN itself is the application configured to provide location dependent services (Office Action, page 3, line 1). Applicants respectfully submit that such a characterization of the CDN is incorrect, since the CDN is merely a database with a processor adapted to implement the algorithm shown in Figure 5. Hanson does not disclose or suggest that the CDN provides location dependent services.

Barnett fails to cure the above-noted deficiencies in Hanson. As outlined above, Barnett only discloses a method for automatically programming frequency scanning radio receivers. According to Barnett, after the passage of a predetermined time period, a controller automatically triggers a GPS receiver to determine the location of the frequency scanning radio receiver. Then, a determination is made as to whether the change in location since the last reprogramming is sufficient to warrant reprogramming

and, if so, reprogramming is initiated. (Barnett, paragraph 0114). Barnett, like Hanson, fails to disclose or suggest receiving a request for a current location of a mobile station from an application configured to provide location dependent services.

Therefore, Applicants respectfully submit that the combination of Hanson and Barnett does not disclose or suggest, at least, “receiving a request for a current location of a mobile station in a mobile communication system, the request being received from an application configured to provide location dependent services,” as recited in claim 29 and the similar limitations recited in claims 41, 42, 53, and 57.

Furthermore, Applicants respectfully submit that the combination of Hanson and Barnett fails to disclose or suggest, at least, “if the elapsed time is within the threshold time limit, providing to the application, as the current location, the last known location, without contacting the mobile station,” as recited in claim 29 and the similar limitations recited in claims 41, 42, 53, and 57. Thus, according to certain embodiments of the invention, the application is provided with the last known location of the mobile station, with the mobile station being contacted, when the elapsed time is within the threshold time limit.

In Hanson, however, the mobile station is always contacted. Indeed, as outlined above, the purpose of Hanson is to contact the mobile station in an efficient manner. As further discussed above, paging the mobile phones is an essential feature and it is impossible for the procedure of Hanson, once started, to end without one of these paging processes. Since the paging of the mobile station always occurs, Hanson cannot disclose

or suggest providing a current location to the application without paging the mobile station. Barnett does not provide any relevant disclosure with respect to this aspect of the claims and, therefore, does not cure the deficiencies in Hanson.

Accordingly, the combination of Hanson and Barnett fails to disclose or suggest, at least, “if the elapsed time is within the threshold time limit, providing to the application, as the current location, the last known location, without contacting the mobile station,” as recited in claim 29 and the similar limitations recited in claims 41, 42, 53, and 57.

Claims 30-40, 43-52, 54-56, 58-67, and 68-72 are dependent upon claims 29, 42, 53, and 57, respectively. Accordingly, claims 30-40, 43-52, 54-56, 58-67, and 68-72 should be allowed for at least their dependence upon claims 29, 42, 53, and 57 and for the specific limitations recited therein.

Claims 33, 46, 54, and 61 were rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Hanson in view of Barnett, and further in view of Kallin (U.S. Patent No. 6,058,308). This rejection is respectfully traversed for at least the reasons discussed below.

Hanson and Barnett are discussed above. Kallin discloses a method for adaptively selecting a paging area throughout which a mobile terminal is paged. A record is maintained which indicates the position where the mobile terminal was located when last accessing the network. When a page is to broadcast to the mobile terminal, the record is accessed and the page is broadcast to selected parts of the network based on the record.

Claims 33, 46, 54, and 61 are dependent upon claims 29, 42, 53, and 57, respectively, and inherit all of the limitations thereof. As discussed above, the combination of Hanson and Barnett fails to disclose or suggest all of the elements of claims 29, 42, 53, and 57. Furthermore, Kallin does not cure the deficiencies in Hanson and Barnett, because Kallin also fails to disclose or suggest, “receiving a request for a current location of a mobile station in a mobile communication system, the request being received from an application configured to provide location dependent services,” and “if the elapsed time is within the threshold time limit, providing to the application, as the current location, the last known location, without contacting the mobile station.” Therefore, the combination of Hanson, Barnett, and Kallin does not disclose or suggest all of the elements of claims 33, 46, 54, and 61. Additionally, claims 33, 46, 54, and 61 should be allowed for at least their dependence upon claims 29, 42, 53, and 57, and for the specific limitations recited therein.

Applicants respectfully submit that the cited prior art fails to disclose or suggest all of the elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is therefore respectfully requested that all of claims 29-72 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

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